# INSTITUTIONAL IMPACT ON THE EXPROPRIATION OF PRIVATE BENEFITS OF CONTROL IN NORTH AFRICA

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## Abstract

This paper examines the effectiveness of six institutional quality measures, namely corruption control, effective government, political stability, regulatory quality, rule of law and voice and accountability, in inhibiting self-rewarding behaviour of boards in terms of their compensation as well as in influencing the likelihood of disclosure of individual executive salaries in IPO listings prospectuses. Using a unique and comprehensive dataset of 78 hand-collected IPO firms from across North Africa from 2000 to 2012 I find substantial evidence that government effectiveness and corruption control are important in inhibiting director self-reward and expropriation while political stability is more associated with increased likelihood of transparency in reporting of salaries. In addition firms from poor informational environments are more likely to initiate enhanced self-governance and transparency so as to overcome institutional deficiencies.

Keywords: IPO; Board of Directors; Institutional Theory

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## 1. Introduction

The recent uprisings and political upheavals across the North African and Middle Eastern region, collectively referred to as the Arab Spring (BBC news, 2011) have focussed worldwide attention on institutions at a state-level on the process of economic and social stagnation and societal change. While there has been a considerable amount of media interest on topics related to excessive salaries, compensation packages and performance related bonuses of wealthy corporate elites during the recent financial crisis, board level remuneration excesses have long been a topic of interest in developing world with alleged corporate corruption amounting to as much as US$ 148 billion a year stifling industrial and economic growth across Africa (BBC news, 2006). However much of the research literature regarding this topic is concentrated on single country studies, and primarily OECD nations such as US, UK, Germany and Japan (for example, see Conyon (1997); Cosh and Hughes (1997); Conyon and Peck (1998) and Shen (2003)), and focussed on either CEO or executive compensation. However the dominance of these measures largely overshadows a broader aggregate board remuneration level that takes into account of firms falling within extended business or family networks, common to much of developing world (Claessens et al, 1999, 2000). Equally there is considerable variation in institutional quality across much of the developing world with this being reflected across North Africa and with particular relevance in wake of Arab Spring (Transparency International website, 2011). Consequently I am motivated to study the impact of institutional quality on aggregate board remuneration using six well established World Bank governance institutional quality measures, corruption control, government effectiveness, political stability and absence from terrorism, regulatory control, rule of law and democratic voice and accountability (World Bank Governance, 2012).

Firms undergoing initial primary offerings (IPOs) provide a unique opportunity to study the agency implications arising from the diversification of ownership to minority outsider shareholders for the first time in the focal firm's lifecycle (Fama (1980); Jensen and Meckling (1976)). As such agency theory in its broadest sense is associated with the

alignment of motivational differences (pecuniary and non-pecuniary) between various incumbent insider management (agents) and minority outsider owners (principals). Consequently its prescriptions tend to focus on the incentive alignment of insider agents with external principals through executive compensation packages, as well as monitoring of insiders through the optimal structure of boards of directors. This latter monitoring role infers a separation of roles of CEO and chairman as well as the proportion of nonexecutive directors and their degree of independence from dominant insider groups, such as the CEO. However the study of board remuneration in a multi-country setting underscores the importance of the role of institutions that act to regulate human behaviour and influence decision-making. Institutional theory seeks to establish the "rules of the game" through which all social and economic behaviour across a society is shaped. As such institutions have a fundamentally important role in shaping incentive alignment and in facilitating and supporting the role of monitoring, which are central tenets of agency theory. Consequently I adopt a combination of institutional and agency theories to elaborate on the role of these perspectives in shaping optimal incentive alignment and in curbing excessive self-reward or expropriation at board level.

I use two measures of aggregate board compensation, the fixed base salary disclosed in IPO listings filings, and a total remuneration measure that takes into account the initial base salary as well as income derived from individual equity holdings in firm and additional stated perks. This is based on a unique and comprehensive hand-collected sample of 78 IPO firms from across North Africa that listed between 2000 and 2012. I use the six well-established World Bank governance measures, namely corruption control, government effectiveness, political stability and absence from violence, regulatory quality, rule of law and voice and accountability, as a proxy of institutional quality. I find that government effectiveness, defined as independence of civil service from political pressure alongside its credibility and effectiveness in designing and executing policy, is closely associated with reigning in excessive self-rewarding behaviour of boards. In addition enhanced corruption

control measures are associated with more conservative board's base salary. A surprising finding is enhanced rule of law is related to increases in board compensation. In terms of disclosure of individual executive salaries (a measure of informational transparency and protection of informational property rights) and I find that political stability is closely associated with enhanced disclosure. However a further unexpected finding is that lower voice and accountability is associated with increased likelihood of disclosure inferring firms in poor quality informational environments are more likely to adopt international best practice transparency measures to counter for state-level institutional deficiencies.

I proceed as follows. In next section I outline theoretical concepts while section 3 outlines justification of hypotheses. Section 4 discusses data and nuances of north African business environment while section 5 discusses empirical methods. Section 6 discusses results and final section concludes.

## 2. Conceptual framework

The theoretical antecedents to the study are drawn principally from a combination of agency and institutional perspectives. This combination facilitates insights beyond the reach of a single perspective which is particularly applicable in a multi-country comparative institutional setting, such as that across North Africa, which is typical of much of developing world in having considerable incongruity between formal and informal institutions.

The agency theoretical perspective has its recent origins in the inaugural work of Jensen and Meckling (1976) and Fama (1980) and primarily focusses on the dual role of incentives and monitoring in order to align motivations between insider incumbent management (otherwise known as agents) and minority outsider legal owners (referred to as principals). However while Fama (1980) dispenses of the earlier analogy of agency cost resulting from a divestment of ownership by an entrepreneurial founder within a firm which is central to Jensen and Meckling (1976) in preference of a view of the focal firm as a legal entity encompassing a nexus of contracts, a fundamental assumption behind both are notions

of efficient markets in risk capital, labour and factors of production. These in particular underscore the perspectives advanced in Fama (1980) that boards of directors have a primary function in providing a lower-cost mechanism for exerting internal discipline (re-ordering and replacement of under-performing incumbent management) than the external market for corporate control (exercised through threat of takeovers by rival firms). An explicit assumption in this perspective is that of efficient markets for equity risk capital as well as assumptions derived from earlier work of Alchian (1969) and Alchian and Demsetz (1972) regarding active markets for managerial labour both inside and outside the focal firm. Fama and Jensen (1983) argue that competitive markets for outside directors in particular underscore their incentives to reign in corporate excesses and act as better monitors of corporate earnings management. This is also reflected in Dechow et al (1996) and Beasley (1996) where findings from US sample provide evidence that outside directors are effective in preventing earnings frauds. However all of these views are centred on the notion of competitive external labour markets for outside directors. Assumptions of efficient risk capital markets are core to agency theory, where minority outside investors are assumed to be able to diversify risks arising from holding any single firm in efficient and liquid capital markets. Their consequent distance from focal firm underscores the need for effective monitoring of agent entities so as to dissuade these from accessing non-pecuniary private benefits of control at their expense (Jensen and Meckling, 1976).

The focus of agency theory on the role of director compensation as an incentive to align motivations of insider agents with those of external principals typically focus on the remuneration of CEOs or executive directors (see for example Core et al (1999); Conyon and Peck (1998); Conyon (1997); Cosh and Hughs (1997)). These typically study the impact of various agency theoretically related board governance measures on executive compensation and are focussed on large, well developed OECD risk capital markets of US and UK. However a distinct strand of the executive compensation literature focusses on the optimal design of managerial agent compensation contracts. This is derived from agency perspective

prescriptions of stimulating management agents to adopt a more entrepreneurial mentality, similar to that envisaged by Jensen and Mecking (1976), where individual compensatory rewards are closely linked to the fortunes of the wider firm. However individual managerial agents are generally risk-averse and thus more likely to take decisions to minimise the risks to their own personal compensation at the detriment of potential value-maximisation envisaged as entrepreneurial culture in agency theory (Harris and Raviv, 1979). The evidence from several well established studies such as Harris and Raviv (1979), Holmstrom (1979) and Grosman and Hart (1983) argue the benefits in stimulating value-maximizing decision-taking by managerial agents when their compensation is linked to some degree to wider firm value. However studies such as Paul (1992) and Sloan (1993) provide cautionary indications as to the relationship between the optimal decision-making processes incentivized in management and the relative proportion of compensation that is equity-based in contrast to its fixed cash component. Finally Mehran (1995) finds evidence that board composition, in terms of insider-associated versus outsider nonexecutives, is linked to the proportion of equity-based compensation in relation to its fixed cash counterpart. Higher proportions of outsider (independent) nonexecutives are associated with higher proportions of equity-based pay while the opposite is true of insider-associated nonexecutives who are deemed more responsive to the risk-aversive nature of incumbent insider managerial agents.

However a core assumption permeating agency related executive compensation studies and incentives is that of efficient and competitive managerial labour markets. This in itself has led to the evolution of theories such as those of human capital (Harris and Helfat, 1997) and managerial discretion (Oxelheim and Randoy (2005); Sanders and Carpenter (1998); Finkelstein and Boyd (1998)) that focus on supply-side and demand-side factor influencing salary levels and additional salary premiums for CEOs and executives. These extend the basic concepts embodied in agency while providing greater emphasis on the competitive role of market-orientated salary packages. This concept of a readily accessible, efficient and integrated market for managerial labour is also a core assumption in explaining

transitions in executive compensatory arrangements involved in privatizations of former state owned enterprises (SOEs), which is particularly common phenomenon in Egypt and to a lesser extent other Maghreb countries, and has led to a significant number of IPOs. Cragg and Dyck (2000) attribute factors causing segmentation in managerial labour market, and thus in market-determined compensation, in the UK from 1970 to 1981 as being a combination of low-incentives for monitoring of SOEs, limited managerial discretion and severe political constraints on pay-setting in SOE firms. Upon privatization and the removal of these characteristic wedges, the source of segmentation was lost and managerial labour market attained a degree of integration with the consequence that pay was equilibrated to the supply and demand forces in commercial market for managerial labour with the focus on firms being able to set salary levels akin to the recruitment of most talented executives. However in practice these assumptions are at best untenable in much of the developing world, and in particular in North Africa, given the extreme narrowness of formal economic sectors, often dominated by a handful of extractive or agricultural industries, and political economies dominated by social elites disinterested in enacting reforms owing to these initiating more equitable distribution of wealth across society thereby inferring a substantial loss accruing to their state-level private benefits of control (North, 1990). As such almost non-existent managerial labour markets combined with significant labour migration drains human and social resources from economies (Quintyn and Taylor, 2005) underscoring national managerial labour markets that are largely segmented from competitive pressures in rest of world.

Institutional theory primarily focusses on the origins of institutions and their role in shaping transactions costs and the "rules of the game". These are formed from the interplay between informal institutions, such as social norms and values that are commonly embodied in religion and culture (Williamson, 2000), as well as their formal counterparts, which are the legal, judicial, political and governmental apparatus, that govern on-going day-to-day transactions within a society (Williamson (2000); North (1989, 1990)). The institutional

environment of North Africa is similar to much of the developing world with nations defined by narrow polity's dominated by social elites, often empowered at independence from primarily European colonial metropoles, together with legal and judicial systems characterised by incomplete and inefficient supportive bureaucratic infrastructure in the civil code law legal and judicial process (Joireman, 2001, 2006). Further significant impediments across North Africa arose from the disenfranchisement of wider population during colonial period with social and economic affairs of the majority being governed by classical Islamic shari'ya law across North Africa (Hearn (2011); Kuran (2004)). These informal institutions are notable in engendering very different social and economic outcomes from the common and civil law based European systems. In particular classical Islamic shari'ya law is rooted firmly in concepts of partnership and risk-sharing (Hearn et al, 2012). Furthermore the wholesale subsuming of informal institutions in favour of the at least nominal universal adoption of legal, political and governmental systems inherited from European colonial metropoles further underscored the narrowness of political economies often dominated by a handful of social elites. This is particularly prevalent in Algeria which was considered an integral part of France itself until independence. These have significant private benefits of control at state-level with substantial roles for authoritarian military involvement and support and an extended role for government in the light of a very weak external contracting environment and paucity in protection of property rights. This in turn infers very high transactions costs which inhibit efficient markets for risk capital that are a core assumption of much of the agency theory literature in terms of minority outsider investors ability to effectively diversify risk. Furthermore the extremely narrow political economies, common across much of North Africa, infers a minimal, even non-existent, competitive market for managerial labour with the extremely high transactions costs prevalent in societies only mitigated by an equally dense network of social ties amongst the elites in political control. This institutional context questions the applicability of traditional agency theory related firm-governance measures, such as the role and ability of independent nonexecutives in curbing

director excesses in terms of self-reward. Furthermore it questions the role of salary in being a premium of sorts in attracting and incentivizing insiders and managerial agents to align their motives to those of outsider principals. Consequently the narrowness of political economies, dominated by social elites, together with inadequate markets for corporate control and managerial labour, provides an ideal laboratory within which to explore the impact of institutional environment as well as agency theory related board controls on director compensation, or self-rewarding behaviour.

## 3. Hypothesis development

In order to study the impact of institutional development on levels of board compensation we develop hypotheses based on the application of six well established World Bank governance institutional quality measures as introduced in Kaufman et al (2009). These build on the evidence from Doidge et al (2007) underscoring the importance of state-level macro-institutional environment over and above that of firm-level governance in terms of the focal firm's ability to access external capital markets. As such institutional improvements are argued to facilitate external capital markets and an enhanced market for corporate control while at same time promoting greater transparency in disclosures and improved access to better functioning legal and judicial systems for minority investors thereby reducing ex-ante agency costs associated with investment.

The institutional theoretical lens forwarded by Williamson (2002) and North (1989, 1994) is underscored by the concept of path dependence and trajectory in economies which is based on the societal matrix of informal and formal institutions. In particular North (1989) characterises the highly bureaucratic nature of Latin America's political economies underscoring the centralisation of political and economic power in the hands of an extremely narrow group of social elites. These attain their considerable influence over state machinery through institutions inherited from the Kingdoms of Spain and Portugal which promote the excessive centralisation of state authority and relegation of individual notions of property

rights to those of the state. This is equally particularly true of formal institutions developed by Napoleonic France and transplanted worldwide principally through colonial conquest. The relegation of individual property rights over that of the state also underscores the more general relegation of judiciary to a more administrative role across civil code law countries (see La Porta et al (1999, 2008)) attributed to a lack of independence of judiciary and law-making process from the national executive. Rajan and Zingales (2003) and North (1994) argue that the entrenched interests and private benefits of control of social elites infer minimal support for genuine reform of societal institutional matrices to engender more equitable social and economic outcomes. Given the notions of tacit support for centralised authority and relative apathy towards rights of individual in civil code law countries promoted by state governmental apparatus the institutions formed from this matrix will likely have a distinct impact on ex-ante alignment of interests between principals (owners) and agents (incumbent management) within a firm. As such institutions formed in such an environment, and prone to greater corruption of state machinery by social elites, are less likely to promote optimal ex-ante incentives (salary) and more likely to engender expropriation thus leading to elevated agency cost. Equally institutions formed on corruption of state apparatus by social elites are less likely to promote optimal informational disclosure, including that of individual director salaries, as this would otherwise provide minority outside investors with informational recourse to address potential expropriation by dominant insider groups within firms. Therefore, the following hypotheses are tested:

**Hypothesis 1a**. Control of corruption is negatively associated with IPO-firm board compensation

**Hypothesis 1b**. Control of corruption is positively associated with likelihood of individual salary disclosure

Following from institutional perspective and the ability of state machinery, defined as government and civil service, to formulate and implement credible policies that independent of the interests of the executive or the influence of dominant social elites is closely associated with the notion of state machinery and wider political economy having broad constituency and representation across population. As such institutional theory of North (1989, 1994) and Williamson (1999, 2008) infers that governments and state machinery that have narrow constituency and are subject to significant influence of social elites are less likely to implement policies engendering social and economic outcomes that are genuinely equitable in nature and in interests of wider society rather than centralised interests of social elites. Consequently the capture of state policy-making machinery (government and civil service) by social elites with vested interests is closely associated to minimal and inequitable reforms being undertaken and a negative impact on the path trajectory (development) of political economy and institutional fabric of society. As such the independence of state machinery from executive and its enhanced credibility and commitment to genuinely equitable policy formulation is a key element in reducing agency costs within firms associated with differences in interests between minority outside principals and incumbent managerial agents in firms. This is particularly true in the light that institutional reform that itself forms the wider path dependence of societal matrices is a reflexive process based on shaping the outcome of an infinite number of transactions within an economy. As such the effectiveness of state machinery in independent policy formulation is closely associated to societal institutional development and reduction in agency costs through optimal incentive alignment. Similarly this reduced agency cost infers lower risks of expropriation and improved protection of minority investors informational property rights. Therefore, the following hypothesis is tested:

**Hypothesis 2a**. Government effectiveness is negatively associated with IPO-firm board compensation

**Hypothesis 2b**. Government effectiveness is positively associated with likelihood of individual salary disclosure

The institutional perspective advanced by North (1989, 1994) also advocates that the lack of political stability across many civil code law Latin American countries and propensity for civil war and violent uprising is in accordance to the considerable vested interests of social elite groups and their disinterest in effecting more equitable social and economic reforms that would cause a loss to their private benefits of control. This institutional inertia and resulting detrimental impact on path trajectories of economies and institutional development results in further disenfranchising wider population leading to an increased probability of violent overthrow and political turbulence the only recourse for wider population to instigate political change. As such institutional theory views political stability as being reflective of the background structure of political economy, narrowness of polity, and dominance of state machinery by special interest groups. These institutional characteristics are less likely to engender optimal incentive alignment (and resulting reduction of agency cost) between principals and agents within firms, with these being dominated by commercial elites drawn from same special interest groups. This would be reflected in higher risks of expropriation and board self-rewarding tendencies in conjunction with a deterioration in protection of informational property rights for minority investors. Therefore, the following hypothesis is tested:

**Hypothesis 3a**. Political stability and absence from terrorism is negatively associated with IPO-firm board compensation

**Hypothesis 3b**. Political Stability is positively associated with likelihood of individual salary disclosure

While institutional theory views narrow political economies dominated by the vested interests of social elites in hindering equitable institutional reform or effective policy making and enactment, North (1994) and Collier (2010) argue that a natural counterbalance to these vested interests arises from a thriving private sector. In particular a strong private sector has the ability to challenge the institutional stagnation created by vested interests of the central executive. Furthermore Collier (2010) argues that a thriving private sector is essential in providing checks and balances supporting more equitable reform and excesses of centralised state that arise through systems defined by patronage and cronyism. As such the ability of government to effect policies promoting effective competition in private sector which avoid the capture of industries by special interest groups with considerable private benefits of control is essential ultimately in achieving a state with a broad constituency able to support effectively enforced property rights. The following hypotheses is tested:

**Hypothesis 4a**. Regulatory quality is negatively associated with IPO-firm director compensation

**Hypothesis 4b**. Regulatory quality is positively associated with likelihood of individual salary disclosure

Jensen and Meckling (1976) assert the principle foundation of agency cost in being rooted in the misalignment of interests between principals and agents which is caused by the latter in pursuing self-interested goals (pecuniary and non-pecuniary) at the expense of the former. Equally the agency theory perspective views contract specification and effective enforcement alongside incentives as necessary prerequisites to reducing agency costs. In particular judiciaries that are independent of the executive and special interest groups (North, 1994) together with substantial bodies of supportive case law, in common law countries or an efficient supportive bureaucracy in civil code law countries (Joireman, 2001), such as North African region, are essential for effective protection of property rights (Djankov et al, 2003).

This provides minority outside investors with legal recourse in event of expropriation. However a critical feature of such ability to protect property rights through efficient courts is protection and enforcement of access of investors to information through accurate firm disclosures. Consequently the following hypotheses is tested:

**Hypothesis 5a**. Rule of Law is negatively associated with IPO-firm director compensation

**Hypothesis 5b**. Rule of law is positively associated with likelihood of individual salary disclosure

North (1989, 1994) argues that the evolutionary development and path trajectory of societies and economies is largely underscored on the shape of the indigenous societies polity (political economy) and capture of state machinery by vested interest groups or social elites. As such institutional environments formed from political and governmental apparatus with broad constituency across wider population that engender notions of democracy and inclusivity that are supported through extensive checks and balances, such as an active private sector, and more likely to support effective institutions to mitigate agency costs within societies transactions. Equally a significant part of broader constituency checks and balances against excesses of executive or vested interest groups is active media, unhindered by influence by executive, together with freedom of expression and association that facilitates societies ability to question decision-making of executive and propose equitable reforms. As such freedom of association and expression across society alongside media freedom can be viewed as part of wider checks and balances of democratic system in a society in reigning-in potential expropriation and enhancing levels of disclosure through enhanced firm-level scrutiny (Hope, 2003)). Therefore the following hypotheses are tested:

**Hypothesis 6a**. Voice & Accountability is negatively associated with IPO-firm director compensation

**Hypothesis 6b**. Voice & Accountability is positively associated with likelihood of individual salary disclosure

## 4. Data and Maghreb business environment

### 4.1 Data

The dataset constructed and used in this paper represent a comprehensive list of all IPOs undertaken on each of the national stock exchanges of the North African region, namely Algeria, Egypt, Morocco and Tunisia for the period 2000 and 2012. The evidence in Table 1 reveals that listing activity is sporadic owing to the smaller size of these markets with large periods of inactivity such as between 2000 and 2005 in Egypt and 2000 and 2004 in Morocco. The smallest of the exchanges, Algeria, has failed to attract any listings since the period immediate following its inception in 1999/2000. However in this case alone I include the additional two listings prior to 2000 given the small and static nature of this market. Tunisia in contrast has had a very small but steady stream of listings over the sample period.

**Table 1**

Flotation prospectuses were hand-collected from financial market regulator websites for Algeria and for Morocco while a combination of Thomson Corporation Perfect Information and Al Zawya databases were used to source Egyptian prospectuses. Al Zawya database, the national stock exchange and direct contact with individual firms were used to source prospectuses for Tunisia. We exclude readmissions and transfers of listings between main and development boards while also excluding demergers, reorganizations and flotations of preferred stock, convertibles, unit and investment trusts. Consequently our final sample is composed of 78 IPO firms that floated ordinary shares with single class voting rights between 2000 and 2012. Share prices were obtained from Bloomberg, DataStream and Al Zawya as well as direct from the national stock exchange in Algeria. US$ Exchanges rates were obtained from Bloomberg.

Considerable care was taken in the interpretation of information from IPO listings prospectuses given the considerable variation in size and quality of these filings across the continent (see Hearn (2013a) for detailed discussion on this issue). Attempts to verify data from prospectuses with additional sources such as firm websites, annual reports and mandatory filings of annual accounts were taken where possible. The declaration of board compensation in Egypt's Ghabbour Auto firm is one such example of successful additional verification, where the total value, in numerical millions, was stated alongside units, also denominated in millions, equating to a total figure in billions or even trillions. Following additional verification with firm's annual reports the value used here is in millions.

4.2 Maghreb business environment

The pervasive influence of extended family control within the region is reflect in sizeable ownership stakes across approximately one third of sample group as is evident in Appendix Table 1. This provides strong evidence that the role of family is more than circumstantial. It is also notable that the highest levels of self-rewarding behaviour, revealed in director total remuneration measures, are prevalent in Egypt and Tunisia with levels being lower in Morocco. This in part is likely to be reflective that family firms in Morocco are smaller in nature and attracted to listing on Casablanca bourse by a range of tax breaks and concessions mediated as part of a determined marketing scheme orchestrated by the bourse to boost otherwise inactive exchange listings (Hearn, 2010). In contrast listed family firms in Egypt are more commonly associated with firms that were established by large families, were then subject to nationalization under the socialist political regime of General Abdul Nasser, only for families to more recently reassert controlling ownership over their former assets. As such many of these Egyptian IPO firms are moribund former state-controlled enterprises complete with cumbersome bureaucratic management systems that have reverted to concentrated family control inferring that there is considerable potential for expropriation and self-rewarding behaviour as these firms lack the levels of control permeating through their

structure of conventional family firms in markets such as Morocco. Claessens et al (2000) attribute the often considerable separation of ownership (defined in terms of concentrated cash flow rights) to control (voting rights) in firms within extended family networks across East Asia to increased likelihood of expropriation. Even when multiple classes of shares are not present other significant means of exerting control are through extensive networks of cross-shareholdings by other firms affiliate to the family or business network, shared common directors across boards of networked firms. However evidence regarding the prevalence of private benefits of control within family as opposed to non-family firms can be seen from Figure 1. This reveals that the largest private benefits of control are attributed to family firms in Algeria, then Egypt before decreasing to Tunisia and Morocco.

**Figure 1**

## 5. Empirical methods and variables

### 5.1 Variables

#### 5.1.1 Dependent variables: director compensation measures

We adopt two measures of aggregate director compensation. The first, being fixed base salary, is the aggregate total of cash remuneration to the board. This is stated in IPO listings prospectuses either as a single aggregate value or as a sum of stated individual amounts attributable to each director. It also includes cash sitting fees, also known as "jetons de presence" in Francophone countries, for nonexecutive directors. Nonexecutives are included in the aggregate board fixed base salary value owing to the significant differences in corporate governance across North Africa, which largely mirrors differences across wider developing world. In particular firms that are subordinate members of large extended business groups or family networks have the control and domination of their affairs, that would be normally attributable to a CEO in Anglo-American shareholder value system, vested through the Chairman or nonexecutive entities with the CEO and executive directors

being viewed more as a hired management team. This structure is especially common in Nigeria as well as being prevalent across remainder of Africa (Hearn and Piesse, 2013).

The second measure is that of aggregate board total remuneration. This includes the fixed base salary cash component of compensation and additionally evaluates the total of individual directors additional personal income derived from dividends on stock ownership in focal firm as well as the stated value of equity options and derivatives, performance-related bonuses and additional income in form of items such as social club membership fees, accommodation and housing costs and travel expenses. As such this total remuneration measure is a more all-encompassing measure providing a conservative estimate at the full director income derived from focal firm. It should be noted that the use of performance-related bonuses is minimal across Africa while the use of equity options and derivatives as incentive-based compensation is extremely rare, mirroring a lack of established derivatives markets across the continent with sole exception being South Africa. As such equity options are only used in a very small handful of IPO firms in Egypt. This second total remuneration measure of compensation captures both a degree of additional equity-risk incentive structure, inferred from agency perspective, as well as being viewed as a measure of board-level compensatory self-reward, also acknowledged in agency terms. The conservative nature of estimate follows the assertion of Dyck and Zingales (2004) that private benefits of control are intrinsically difficult to quantify as a controlling party will only extract resources when it is difficult to prove this is the case.

Both measures of compensation are natural logarithmically transformed. This is in line with literature (Core et al, 1999) as well as adhering to common practice in human resource consultancy "guide charts" where this is usually related to the logarithm of firm size which in this case is the log of firm revenues. Furthermore the use of log-transformed value facilitating the measure of proportionate effects of variables on compensation through the regression coefficients rather than the dollar value effect as would otherwise be the case in non-log transformed compensation data.

### 5.1.2 Measures of institutional quality

The quality of the institutions is measured using the World Bank Governance Indicators (2011), developed by Kaufman et al (2009). These are a set of six indices that capture aspects of state-level institutions and citizens' perceptions of them. These were first constructed in 1996, then updated every two years until 2002 and annual thereafter. The indicators are compiled from the responses on the quality of governance obtained from 35 data sources in 33 organizations and are drawn from a large sample of firms, citizens and experts in industrial and emerging countries, with added information from institutes, think tanks, non-governmental organizations, and international organizations (Kaufman et al, 2009). The six indicators are constructed using an unobserved components methodology (see Kaufman et al (2009), with values ranging from approximately -2.5 to +2.5 and where higher values denote better governance outcomes.

The six governance indices are defined by the World Bank (World Bank Governance website, 2011) as follows:

Control of Corruption –capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests

Government Effectiveness –capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies

Political Stability and Absence of Violence/Terrorism –capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism

Regulatory Quality –capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development

Rule of Law – capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence

Voice and Accountability –capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media

### 5.1.3 Control Variables

Board controls: All board controls are drawn from prescriptions of the agency perspective. As such we use four controls. Board size, defined as total number of executive and nonexecutive directors in unitary split board systems, or number of nonexecutive directors plus members of executive management committee in supervisory two-tier board systems. This follows the literature that suggests that larger boards are more difficult to coordinate and there is less effective communication between directors, resulting in greater dominance by the CEO or insider groups (Boyd (1994); Yermack (1996)). Board independence ratio is the proportion of nonexecutive directors to total board size, as defined above. However while this measure is a common control in agency literature it is limited in not distinguishing between insider-associated and outsider, or independent, nonexecutives and their levels of personal stock ownership, if any. This motivates the construction and use of the next two controls. Ratio true independence measures the proportion of outside nonexecutive directors to total board size. Finally ratio of nonexecutives owning more than 2% stock issued by firm to total board size provides an indication of nonexecutives that have significant personal ownership stakes in focal firm. The value of 2% is reduced from the 5% stock ownership

value for which shareholders must be reported as block-holders in US SEC filings in the light of weaker disclosure and regulatory requirements across Africa than the US market.

Economic determinants: Three economic determinant controls are used. The first is the natural logarithm of firm revenues in year preceding IPO. Rosen (1982) and Smith and Watts (1992) ascribe higher firm revenues to firms that are larger and in having greater economic growth opportunities inferring more complex task environments for directors. The second is return on assets (ROA) measured in terms of accounting earnings before tax on total asset value, with both denominated in US$ and measured in year preceding IPO. This provides a measure of firm operating performance. The final control is natural logarithm of firm age, measured in years from IPO year to year of establishment of firm. This provides an indication of risk with younger firms having less operating history possessing more risk than their counterparts with well-established trading histories.

Ownership controls: Three ownership control categories are used to control for the impact of different types of block-holder in terms of concentration of cash flow rights pre-IPO. These are corporate block entities, family and state. This last category of owner is prevalent in partial privatizations that are prevalent across North Africa involving a long term foreign partner gradually absorbing the shareholding divested by state entities.

## 5.2 Methods

### 5.2.1 Board compensation

Estimation is by pooled ordinary least squares. In each case the six World Bank institutional quality index measures are recursively added to the base model that is composed only of the controls.

$$
\begin{aligned}
Compensation_{it} = \alpha \\
&+\beta_1 Institutional\ Quality_{jt} \\
&+\beta_2 Board\ Controls_{it} \\
&+\beta_3 Economic\ Deter\min ant_{it-1} \\
&+\beta_4 Ownership_{it-1} \\
&+\varepsilon_{it}
\end{aligned} \tag{1}
$$

with subscripts i for firm level, j for country level variables and t for time period. Country fixed effects are used across all models in preference to using additional (1/0) dummy controls. All institutional quality variables and controls are defined above.

5.2.2 Likelihood of individual executive pay disclosure

Logistic (Logit) regressions are developed with the dependent variable being dichotomous taking the value of 1 for disclosure of individual executive salary and 0 otherwise. This takes the form:

$$
\begin{aligned}
Log\frac{P(CEO\ Salary\ Disclosure_t)}{P(1-CEO\ Salary\ Disclosure_t)} = \alpha \\
&+\beta_1 Institutional\ Quality_{jt} \\
&+\beta_2 Board\ Controls_{it} \\
&+\beta_3 Economic\ Deter\min ant_{it-1} \\
&+\beta_4 Ownership_{it-1} \\
&+\varepsilon_t
\end{aligned} \tag{2}
$$

with subscripts i for firm level, j for country level variables and t for time period and where all board governance, economic determinant and control variables are defined in previous section.

## 6. Results

6.1 Descriptive statistics and correlations

The evidence from Table 2 reveals that there is considerable dispersion in both board compensation as well as disclosure of individual executive salary both within and between North Africa's IPO markets. This is reflected in terms of a range of country-mean base salary from US$ 38,850 in Algeria to US$ 138,353,750 in Egypt while intra-country standard deviations are routinely as high or higher than the aggregate mean levels themselves. This is likely reflective of the wide variety in types of firm listing on these markets ranging from those participant to family networks to former SOE's. There is equally a significant increase from board base salary to aggregate board total remuneration although it is notable the largest increases are in Algeria and Egypt. This was also indicated earlier from Figure 1 in terms of differences between family and non-family firms. Finally there is a considerable dispersion in individual executive salary disclosures with this ranging from 52% of IPO prospectuses in Tunisia to 3% in Morocco. It is also notable that while intra-country standard deviations are high between Egypt, Algeria and Tunisia that these are extremely low in Morocco which would indicate a paucity in informational environment in Morocco.

The dispersion across the six World Bank governance indices between the four North African markets is also considerable and ranges from Tunisia with the highest level of institutional quality to Algeria with the weakest. It is also notable that Egypt and Algeria both rank very poorly in terms of corruption control and voice and accountability measures.

**Table 2**

6.2 Regression results

Evidence from correlation analysis reveals minimal levels of correlation and equally minimal statistical significance attached to these, mitigating concerns over potential multicollinearity[1]. However the large and significant correlations between all six of the World Bank governance measures necessitates their consideration within a separate context with their individual recursive addition into models. The application of country-level fixed effects accounts for

[1] Pearson correlation tables are available from author upon request

latent institutional differences across the four North African markets where despite all sharing French civil code law legal and governmental institutions there remain significant differences. These are exemplified by Morocco and Algeria in particular having followed dirigiste (state-led) economic governance model while Egypt was heavily influenced by socialist nationalization policies of Abdel Nasser which have only been reversed since late 1990's.

The evidence from Tables 3 and 4 reveal substantial support for hypothesis H2a in terms of a large, negative coefficient of association between government effectiveness and board base salary (-9.366) and board total remuneration (-11.566) which is statistically significant at 99-95% confidence margin. In addition there is partial support for hypothesis H1a relating corruption control to both compensation measures. This partial support arises from a large, negative (-6.500) relationship between board base salary and government effectiveness which is statistically significant at 95% confidence margin. However there is a considerable decrease in absolute size of the coefficient between total remuneration and government effectiveness while this lacks statistical significance at any discernible confidence level. These results are in line with very recent literature on institutional determinants of board remuneration in West Africa in Hearn (2013c). A notable unexpected result is the large, positive coefficient between rule of law and total remuneration (+6.848) which is statistically significant at 90% confidence margin. There is no precedent in literature to explain this finding. However a plausible explanation relates to bureaucratically and operationally efficient legal process and court operation within a civil code law system that through promoting the subordination of individual to centralized notion of state authority in effect acts to support a crony-capitalist system. As such enhanced rule of law institutional quality in developing country civil code law settings that are dominated by extended families and business groups operating on a crony basis are more supportive of centralized state authority and thus potential expropriation. In this light the large, positive association

between rule of law and board total remuneration (our measure of expropriation) is a plausible outcome.

There are generally similar relationships between controls and both compensation measures. In particular there is a positive and statistically significant relationship between board size and both compensation measures. While this is in part a function of the higher the number of directors then the greater the aggregate compensation it is importantly a reflection on larger boards being less effective governance instruments. Both Boyd (1994) and Yermack (1996) ascribe larger boards to having poorer communication between members and a greater propensity for domination by dominant insider groups (or CEO) with consequent increased likelihood of expropriation. Other notable relationships are a large positive association between ratio of independent nonexecutives and both compensation measures while a similarly sized but negative relationship exists with the ratio of nonexecutives that have personal ownership stakes in excess of 2%. Hearn (2013c) finds a similar relationship in West Africa and ascribes this to the lack of recourse, influence and effective monitoring ability of independent nonexecutives inferring apathy in tackling board self-reward tendencies. The opposite is likely to be true of nonexecutives with an ownership stake in excess of 2% as by virtue of their personal ownership they are able to exert effective monitoring through enhanced voting rights and control. In terms of firm controls and it is notable that a large positive and statistically significant association exists between firm performance (proxied by ROA) and the total remuneration compensation measure. While this lacks statistical significance in terms of base salary it infers that expropriation is more likely in high performance firm. This line of reasoning can be extended in terms of firms participant to large extended family networks, which themselves have greater separation between ownership and control (Claessens et al, 2000) are more likely to benefit from that group affiliation in terms of coordination of resources within network which is reflected in higher performance, while at same time being vulnerable to expropriation precisely by same mechanism of separation of ownership from control. Finally there is a positive association

between concentrated family ownership and both compensation measures. However while there is a similarly sized positive relationship between state ownership and base salary this is reversed in direction (becomes negative) for total remuneration measure.

**Tables 3 and 4**

6.3 Logistic regression results for likelihood of disclosure

The institutional determinants of expropriation of protection of informational property rights for minority investors is revealed in Table 5. The findings support hypothesis H3b through a large, negative coefficient (+6.101) that is statistically significant at 90% confidence level between political stability and likelihood of disclosure. However the very large negative coefficient (-13.363) that is statistically significant at 99-95% confidence margin between voice and accountability and likelihood of disclosure is the opposite of postulated relationship in hypothesis H6b. The most likely explanation for this sizeable negative relationship is based on the premise that firms seeking to raise external finance in countries characterised by very weak independent media, paucity in democratic freedoms of association and governments lacking in broad constituency are more likely to adopt international best practice corporate governance mechanisms and disclosure to counter for these state-level institutional deficiencies (see Dyck and Zingales (2004)).

In terms of controls and there is a greater likelihood of disclosure with smaller boards while these are composed of higher proportions of nonexecutives with personal share ownership in excess of 2%. Disclosure is also more likely in underperforming firms (with lower ROA) while disclosure is equally twice as likely with increased concentrated ownership by corporate block-holders and three times more likely with concentrated ownership of state.

**Table 5**

## 7. Discussion and Conclusions

This study elaborates on the institutional determinants of expropriation in terms of two board compensation measures and disclosure of individual executive salaries in IPO listings prospectuses. The two measures of salary are fixed base salary and total remuneration which takes into account base salary, additional perks and allowances, dividend income and any income derived from bonuses, derivative ownership and director level income derived from affiliated firms under the control of focal IPO firm.

Using a unique hand-collected and comprehensive sample of IPO firms from across North African equity markets of Morocco, Algeria, Tunisia and Egypt from 2000 to 2012 I find evidence that government effectiveness is inversely related to board compensation. In addition corruption control is inversely related to aggregate board base salary while a surprising finding is enhanced rule of law is associated with increased board total remuneration. Finally I find evidence that increasing political stability is associated with enhanced likelihood of disclosure of individual executive salaries while voice and accountability has a large inverse relationship with likelihood of disclosure. This is infers that firms in poor informational environments are more likely to have elevated levels of transparency in relation to board income, salary and compensation practices.

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Table 1. Number of IPOs in North Africa by market

IPO activity, by market, from across North African region between 2000 and 2012.

| Year | Total | Algeria | Egypt | Tunisia | Morocco | | |
|---|---|---|---|---|---|---|---|
| | | | | | Marché principal | Marché développement | Marché croissance |
| 2000 | 5 | 3* | 1 | -- -- | 1 | -- -- | -- -- |
| 2001 | 6 | -- -- | -- -- | 4 | -- -- | 2 | -- -- |
| 2002 | 1 | -- -- | -- -- | 1 | -- -- | -- -- | -- -- |
| 2003 | 1 | -- -- | -- -- | 1 | -- -- | -- -- | -- -- |
| 2004 | 2 | -- -- | -- -- | -- -- | 2 | -- -- | -- -- |
| 2005 | 10 | -- -- | 3 | 4 | 2 | 1 | -- -- |
| 2006 | 13 | -- -- | 1 | 2 | 4 | 3 | 3 |
| 2007 | 15 | -- -- | 2 | 4 | 5 | 3 | 1 |
| 2008 | 10 | -- -- | 2 | 2 | 4 | 2 | -- -- |
| 2009 | 1 | -- -- | -- -- | 1 | -- -- | -- -- | -- -- |
| 2010 | 8 | -- -- | 1 | 4 | 3 | -- -- | -- -- |
| 2011 | 5 | 1 | -- -- | 1 | 3 | -- -- | -- -- |
| 2012 | 1 | -- -- | -- -- | 1 | -- -- | -- -- | -- -- |
| **Total:** | **78** | **4** | **10** | **25** | **24** | **11** | **4** |

Note: * includes IPO listing from 1999/1998

Table 2. Descriptive statistics for director remuneration and disclosure across North Africa

Descriptive statistics for sample of 78 North African IPO firms. Board base salary (the fixed value is reported in IPO listings prospectus per director) and the conservative estimate of board total remuneration (estimated using Forbes Billionaire methodology (Forbes Billionaire, 2011)) are delineated in US$ thousands. Disclosure is a dummy variable taking value 1 if individual CEO salary is disclosed in IPO listings prospectus and 0 otherwise. Country level averages of World Bank Governance institutional quality indices. These are the six corruption control, government effectiveness in implementation of policies promoting private sector development, political stability and absence from terrorism, regulatory quality, rule of law and democratic voice and accountability indices (developed by Kaufman et al (2009)) across all markets. Indicators 1 to 6 have been rescaled on a 0-1 scale.

| | | **Board Base Salary (US$ '000)** | | **Board Total Remuneration (US$ '000)** | | **Disclosure (1/0)** | |
|---|---|---|---|---|---|---|---|
| | **$N_{Total}$** | **Mean** | **Std. dev.** | **Mean** | **Std. dev.** | **Mean** | **Std. dev.** |
| Algeria | 4 | 38.85 | 23.64 | 219,190.10 | 438,281.59 | 0.25 | 0.50 |
| Egypt | 10 | 138,353.75 | 323,122.69 | 455,662.15 | 1,020,348.50 | 0.30 | 0.48 |
| Morocco | 39 | 655.10 | 516.76 | 1,182.78 | 1,289.34 | 0.03 | 0.16 |
| Tunisia | 25 | 3,123.89 | 8,206.09 | 5,206.81 | 8,813.56 | 0.52 | 0.51 |

| | | **Corrupt Control** | **Effective Government** | **Political Stability** | **Regulatory Quality** | **Rule of law** | **Voice & Accountability** |
|---|---|---|---|---|---|---|---|
| | **$N_{Family}$** | **Mean** | **Mean** | **Mean** | **Mean** | **Mean** | **Mean** |
| Algeria | 1 | 0.239 | 0.333 | 0.274 | 0.363 | 0.294 | 0.235 |
| Egypt | 6 | 0.286 | 0.414 | 0.527 | 0.494 | 0.534 | 0.290 |
| Morocco | 23 | 0.356 | 0.466 | 0.555 | 0.528 | 0.518 | 0.390 |
| Tunisia | 14 | 0.408 | 0.590 | 0.677 | 0.556 | 0.563 | 0.298 |

Table 3. The impact of external institutional quality on board remuneration (base salary)

Regression models are pooled cross section OLS regressions relating control variables and board characteristics to director remuneration. The six institutional quality measures are World Bank Governance measures as developed in Kaufman et al (2006), namely institutional quality indices for corruption control, effective government, political stability, regulatory quality, rule of law, voice and accountability and an aggregate measure of all six indices. Board controls are board size, defined as total number of directors (namely both executives and nonexecutives). Board independence ratio is proportion of nonexecutives to total board size. Economic determinants are natural logarithm of firm revenues in year preceding IPO and ROA, defined as accounting returns (net income) divided by total assets value in year preceding IPO. Ownership controls are level of ownership (percent) prior to IPO for corporate block shareholder, state and family entities. The data have been sourced manually from the last prospectus lodged with the relevant securities exchange or national regulator immediately prior to listing.

| | **Log (Board base salary)** | | | | | | |
|---|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
| Intercept | 1.568 [1.56]* | 3.584 [2.43] † | 6.039 [2.39] † | 1.601 [0.83] | 0.457 [0.20] | 0.602 [0.30] | 2.486 [2.30]** |
| **Institutional Quality** | | | | | | | |
| H1a: Corrupt Control | | **-6.50 [-2.13]**** | | | | | |
| H2a: Government Effectiveness | | | **-9.366 [-1.74]**** | | | | |
| H3a: Political Stability | | | | -0.069 [-0.02] | | | |
| H4a: Regulatory Quality | | | | | 2.170 [0.63] | | |
| H5a: Rule of law | | | | | | 1.981 [0.64] | |
| H6a: Voice & Accountability | | | | | | | -2.112 [-0.76] |
| **Board Controls** | | | | | | | |
| Board Size | 0.059 [2.50] † | 0.054 [2.27]** | 0.044 [1.95]** | 0.059 [2.58] †† | 0.060 [2.54] † | 0.061 [2.63] †† | 0.058 [2.58] †† |
| Board Ind. Ratio | -0.032 [-0.07] | -0.013 [-0.03] | -0.269 [-0.66] | -0.032 [-0.07] | -0.054 [-0.12] | -0.023 [-0.05] | 0.054 [0.13] |
| Ratio Independent Nonexecutives | 1.310 [1.68]** | 1.390 [2.03]** | 1.451 [1.95]** | 1.313 [1.67]** | 1.241 [1.61]* | 1.289 [1.61]* | 1.338 [1.79]** |
| Ratio Nonexecutives own>2pc | -1.830 [-1.28]* | -1.799 [-1.32]* | -2.102 [-1.40]* | -1.830 [-1.28]* | -1.852 [-1.30]* | -1.947 [-1.32]* | -2.193 [-1.54]* |
| **Economic Determinants** | | | | | | | |
| Log (Revenue) | 0.037 [0.16] | 0.074 [0.33] | 0.086 [0.44] | 0.038 [0.18] | 0.029 [0.12] | 0.021 [0.09] | -0.023 [-0.11] |
| ROA | -0.439 [-0.71] | -0.081 [-0.13] | 0.127 [0.21] | -0.434 [-0.60] | -0.283 [-0.40] | -0.603 [-0.83] | -0.241 [-0.37] |
| **Ownership** | | | | | | | |
| Corp. Block Own | 0.003 [0.71] | 0.004 [1.13] | 0.003 [0.75] | 0.003 [0.71] | 0.003 [0.73] | 0.002 [0.59] | 0.002 [0.45] |
| Family Own | 0.004 [1.46]* | 0.005 [2.06]** | 0.005 [1.80]** | 0.004 [1.45]* | 0.004 [1.47]* | 0.004 [1.42]* | 0.004 [1.52]* |
| State Own | 0.004 [1.12] | 0.006 [1.48]* | 0.005 [1.31]* | 0.004 [1.14] | 0.005 [1.28]* | 0.004 [1.11] | 0.005 [1.38]* |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| F-test | 4.79 [0.00] | 4.82 [0.00] | 5.54 [0.00] | 4.34 [0.00] | 4.39 [0.00] | 4.39 [0.00] | 4.51 [0.00] |
| Observations | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Adjusted $R^2$ | 0.4079 | 0.4292 | 0.4718 | 0.3968 | 0.4007 | 0.4003 | 0.4085 |
| Change $R^2$ (over control variables only) | | **0.0213** | **0.0639** | -0.0111 | -0.0072 | -0.0076 | **0.0006** |

Notes: (1) T-statistics are in parentheses (2) White cross-section standard errors & covariance (d.f. corrected).

* Significant at the 0.10 level

* Significant at the 0.05 level

† Significant at the 0.01 level

†† Significant at the 0.005 level

Table 4. The impact of external institutional quality on board remuneration (total remuneration)

Regression models are pooled cross section OLS regressions relating control variables and board characteristics to director remuneration. Institutional quality, board governance, economic determinants and ownership variables are as defined in Table 3.

| | **Log (Board total remuneration)** | | | | | | |
|---|---|---|---|---|---|---|---|
| | Model 8 | Model 9 | Model 10 | Model 11 | Model 12 | Model 13 | Model 14 |
| Intercept | 1.395 [1.46]* | 1.420 [0.84] | 6.917 [3.75] †† | 0.516 [0.24] | 2.330 [1.17] | -1.942 [-0.77] | 0.927 [0.71] |
| **Institutional Quality** | | | | | | | |
| H1a: Corrupt Control | | -0.080 [-0.03] | | | | | |
| H2a: Government Effectiveness | | | **-11.566 [-3.06]** †† | | | | |
| H3a: Political Stability | | | | 1.853 [0.59] | | | |
| H4a: Regulatory Quality | | | | | -1.824 [-0.50] | | |
| H5a: Rule of law | | | | | | **6.848 [1.53]*** | |
| H6a: Voice & Accountability | | | | | | | 1.076 [0.44] |
| **Board Controls** | | | | | | | |
| Board Size | 0.066 [2.19]** | 0.066 [2.16]** | 0.048 [1.48]* | 0.070 [2.39] † | 0.066 [2.14]** | 0.075 [2.65] † | 0.067 [2.15]** |
| Board Ind. Ratio | -0.049 [-0.11] | -0.049 [-0.11] | -0.341 [-0.77] | -0.057 [-0.12] | -0.031 [-0.07] | -0.017 [-0.04] | -0.094 [-0.22] |
| Ratio Ind Nonexecutives | 0.810 [1.58]* | 0.811 [1.58]* | 0.983 [1.81]** | 0.740 [1.50]* | 0.868 [1.60]* | 0.736 [1.43]* | 0.796 [1.49]* |
| Ratio Nonexec own>2pc | -1.831 [-1.47]* | -1.831 [-1.45]* | -2.167 [-1.82]** | -1.821 [-1.47]* | -1.813 [-1.48]* | -2.235 [-1.66]* | -1.646 [-1.28]* |
| **Economic Determinants** | | | | | | | |
| Log (Revenue) | 0.132 [0.56] | 0.133 [0.58] | 0.193 [0.97] | 0.091 [0.43] | 0.139 [0.59] | 0.077 [0.34] | 0.163 [0.73] |
| ROA | 2.223 [2.06]** | 2.228 [2.04]** | 2.923 [2.78] †† | 2.079 [1.94]** | 2.092 [2.03]** | 1.657 [1.54]* | 2.122 [2.05]** |
| **Ownership** | | | | | | | |
| Corp. Block Own | -0.001 [-0.34] | -0.001 [-0.33] | -0.001 [-0.30] | -0.001 [-0.35] | -0.001 [-0.34] | -0.003 [-0.66] | -0.001 [-0.20] |
| Family Own | 0.004 [1.47]* | 0.004 [1.42]* | 0.005 [1.83]** | 0.004 [1.43]* | 0.004 [1.43]* | 0.004 [1.45]* | 0.004 [1.41]* |
| State Own | -0.007 [-1.28]* | -0.007 [-1.20] | -0.007 [-1.18] | -0.007 [-1.28]* | -0.008 [-1.28]* | -0.007 [-1.31]* | -0.008 [-1.36]* |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| F-test | 5.20 [0.00] | 4.71 [0.00] | 6.33 [0.00] | 4.78 [0.00] | 4.74 [0.00] | 5.23 [0.00] | 4.74 [0.00] |
| Observations | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Adjusted $R^2$ | 0.4327 | 0.4220 | 0.5120 | 0.4267 | 0.4242 | 0.4543 | 0.4244 |
| Change $R^2$ (over control variables only) | | -0.0107 | **0.0793** | -0.0060 | -0.0085 | **0.0216** | -0.0083 |

Notes: (1) T-statistics are in parentheses (2) White cross-section standard errors & covariance (d.f. corrected).

* Significant at the 0.10 level

* Significant at the 0.05 level

† Significant at the 0.01 level

†† Significant at the 0.005 level

Table 5. The impact of board characteristics on likelihood of individual salary disclosure

Logistic regression models are relating control variables and board characteristics to the likelihood of disclosure of individual executive director salary. Institutional quality, board governance, economic determinants and ownership variables are as defined in Table 3.

| | **Likelihood of disclosure of individual salary** | | | | | | |
|---|---|---|---|---|---|---|---|
| | Model 15 | Model 16 | Model 17 | Model 18 | Model 19 | Model 20 | Model 21 |
| Intercept | 5.051 [2.34] † | 4.678 [1.21] | 2.547 [0.71] | 1.620 [0.51] | 0.892 [0.16] | 0.697 [0.15] | 10.499 [2.57] †† |
| **Institutional Quality** | | | | | | | |
| H1b: Corrupt Control | | 0.968 [0.11] | | | | | |
| H2b: Government Effectiveness | | | 4.023 [0.78] | | | | |
| H3b: Political Stability | | | | **6.101 [1.39]*** | | | |
| H4b: Regulatory Quality | | | | | 8.258 [0.78] | | |
| H5b: Rule of law | | | | | | 9.49 [1.07] | |
| H6b: Voice & Accountability | | | | | | | **-13.633 [-2.32]** † |
| **Board Controls** | | | | | | | |
| Board Size | -0.420 [-3.20] †† | -0.417 [-3.14] †† | -0.398 [-2.98] †† | -0.412 [-2.76] †† | -0.444 [-3.12] †† | -0.399 [-2.68] †† | -0.382 [-2.92] †† |
| Board Ind. Ratio | -0.026 [-0.02] | -0.062 [-0.04] | -0.016 [-0.01] | -0.197 [-0.14] | -0.064 [-0.04] | -0.277 [-0.20] | 0.444 [0.31] |
| Ratio Ind. Nonexecutives | -0.440 [-0.19] | -0.354 [-0.15] | -0.105 [-0.05] | 0.199 [0.09] | -0.089 [-0.04] | 0.373 [0.16] | 0.489 [0.23] |
| Ratio Nonexec own>2pc | 8.165 [1.79]** | 8.105 [1.76]** | 7.566 [1.63]* | 7.064 [1.49]* | 7.657 [1.68]** | 6.886 [1.44]* | 4.401 [0.95] |
| **Economic Determinants** | | | | | | | |
| Log (Revenue) | -0.385 [-0.85] | -0.387 [-0.85] | -0.358 [-0.77] | -0.496 [-1.03] | -0.422 [-0.91] | -0.626 [-1.28]* | -0.801 [-1.13] |
| ROA | -21.401 [-3.18] †† | -21.135 [-2.99] †† | -20.299 [-2.90] †† | -20.89 [-2.99] †† | -22.991 [-3.38] †† | -22.757 [-3.39] †† | -24.247 [-3.39] †† |
| **Ownership** | | | | | | | |
| Corp. Block Own | 0.020 [1.28]* | 0.019 [1.17] | 0.020 [1.28]* | 0.021 [1.33]* | 0.020 [1.29]* | 0.019 [1.19] | 0.024 [1.72]** |
| Family Own | 0.007 [0.76] | 0.007 [0.75] | 0.007 [0.72] | 0.008 [0.77] | 0.009 [0.86] | 0.010 [0.99] | 0.014 [1.16] |
| State Own | 0.017 [1.14] | 0.018 [1.14] | 0.021 [1.34]* | 0.030 [1.75]** | 0.028 [1.44]* | 0.032 [1.95]** | 0.013 [0.63] |
| No Obs. = 0 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| No Obs. = 1 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| No. Obs. | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| LR statistic (prob.) | 29.22 [0.00] | 29.25 [0.00] | 29.95 [0.00] | 31.57 [0.00] | 29.77 [0.00] | 31.24 [0.00] | 35.93 [0.00] |
| McFadden $R^2$ | 0.3512 | 0.3515 | 0.3599 | 0.3794 | 0.3577 | 0.3755 | 0.4318 |

Notes: (1) Z-statistics are in parentheses (2) QML (Huber/White) standard errors & covariance.

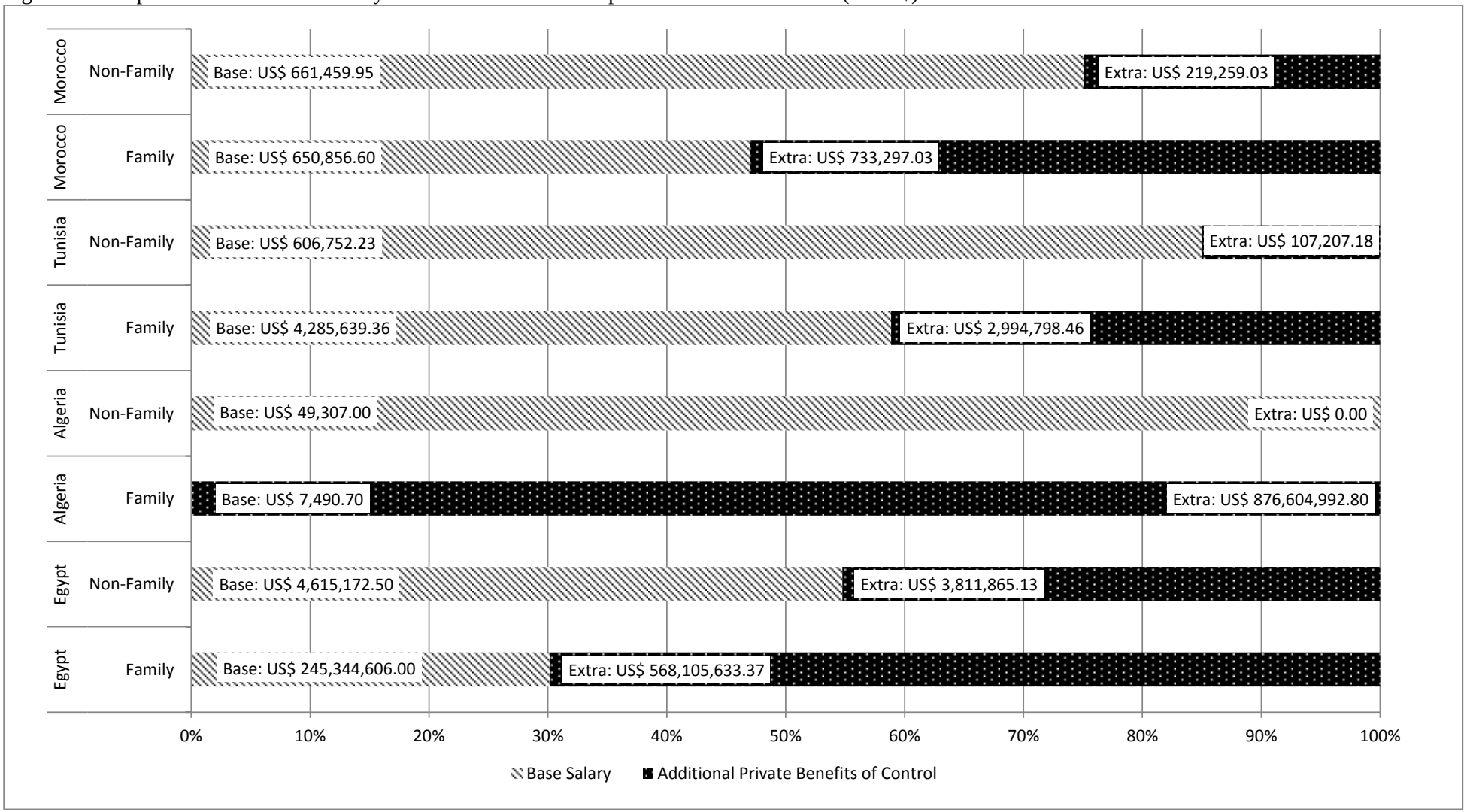
* Significant at the 0.10 level

* Significant at the 0.05 level

† Significant at the 0.01 level

†† Significant at the 0.005 level

Figure 1. Comparison of board base salary and remuneration-based private benefits of control (in US$) across North African markets




Source: IPO listing prospectuses and authors own calculations

Appendix Table 1. Descriptive characteristics of Family controlled IPO firms

Table detailing family controlled firms across Maghreb region with respective gross amounts raised from IPO together with director base salary and total remuneration values. These are defined in Table 2.

| | Family | IPO Firm | Industry | Gross Proceed (US$ '000) | Family Own Pre-IPO (%) | Family Own Post-IPO (%) | Board Base Salary (US$ '000) | Board Total Rem. (US$ '000) |
|---|---|---|---|---|---|---|---|---|
| **Algeria** | Khelifati | Alliance Assurances | Finance | 27,465.90 | 98.00 | 67.53 | 7.49 | 876,612.48 |
| **Egypt** | Sawiris | Orascom Telecom Holding<br>أوراسكوم للاتصالات والاعلام والتكنولوجيا القابضة | Telecommunications | 312,300.00 | 100.00 | 55.15 | 330.00 | 10,074.17 |
| | Talaat Moustafa | Talaat Moustafa Group<br>مجموعة طلعت مصطفى القابضة | Real Estate | 418,200.00 | 47.30 | 42.30 | 17,300.00 | 26,660.73 |
| | Sadek and Ghabbour | Ghabbour Auto<br>جى بى اوتو | Car Distribution | 846,000.00 | 86.60 | 63.40 | 976,821.00 | 989,596.32 |
| | Arafa | Al Arafa Investments and Consultancies<br>العرفة للاستثمارات والاستشارات | Real Estate | 15,916.40 | 75.60 | 67.00 | 230,028.00 | 3,035,944.59 |
| | Eleish; Zeid; Nadim | Maridive and Oil Services<br>الخدمات الملاحية والبترولية - ماريدايف | Oil services | 41,488.20 | 39.60 | 29.46 | -- -- | -- -- |
| | Thabet | Juhayna<br>جهينة للصناعات الغذائية | Food Manufacture | 193,400.00 | 51.20 | 36.70 | 2,244.03 | 4,975.38 |
| **Morocco** | Alj | Groupe Unimer<br>أونيمير | Fishing | 5,800.95 | 99.70 | 79.80 | 155.10 | 440.04 |
| | Tazi | Société de Therapeutique Marocaine<br>سوطيما | Pharmaceutical Distribution | 12,693.40 | 74.98 | 62.77 | 1,042.97 | 1,042.97 |
| | Khalil | Dari Couspate<br>داري كوسباط | Food Machinery | 3,469.53 | 98.00 | 69.10 | -- -- | -- -- |
| | Sefrioui | Douja Prom Addoha<br>دجى مجموعة الضحى | Technology | 324,872.00 | 95.00 | 61.75 | 750.43 | 750.43 |
| | Debbargh | Cartier Saada<br>كارتي سعادة | Distribution | 2,609.20 | 63.00 | 43.70 | -- -- | -- -- |
| | Benjelloun | Distrisoft Maroc SA | Office Machinery Import and Distribution | 7,692.44 | 30.60 | 21.70 | 417.23 | 771.10 |
| | Chaabi | Société Nationale d'Electrolyse et de Pétrochimie<br>الشركة الوطنية للبيتروكيماويات | Chemical Manufacture and Production | 123,408.00 | 100.00 | 65.00 | 634.67 | 2,515.18 |
| | Puech | Transport International Maroc<br>تيمار | Transport | 1,851.12 | 100.00 | 76.92 | 264.08 | 333.77 |
| | Benjelloun | Salafin | Finance | 32,259.50 | 92.80 | 74.50 | 469.15 | 469.15 |
| | Bensaleh | Compagnie d'Assurances et de Réassurances<br>أطلنطا | Finance | 141,845.00 | 59.92 | 42.92 | 1,075.81 | 1,813.10 |
| | Amor | Microdata<br>ميكروداتا | Technology | 14,216.60 | 100.00 | 70.00 | 537.90 | 865.76 |

| | Family | IPO Firm | Industry | Gross Proceed (US$ '000) | Family Own Pre-IPO (%) | Family Own Post-IPO (%) | Board Base Salary (US$ '000) | Board Total Rem. (US$ '000) |
|---|---|---|---|---|---|---|---|---|
| | Mernissi | Société de Promotion Pharmaceutique de Maghreb<br>شركة الإنعاش الصيدلي للمغرب - بروموفارم | Pharmaceutical Distribution | 27,930.20 | 79.85 | 54.50 | 870.89 | 1,204.00 |
| | Alj | Stockvis<br>ستوكفيس شمال أفريقيا | Industrial | 12,752.50 | 89.28 | 71.42 | 609.62 | 801.67 |
| | Lazraq | Alliances Développement Immobilier<br>أليانس | Tourism | 234,684.00 | 82.64 | 60.13 | 680.63 | 5,674.33 |
| | Fahim | Delta Holding<br>دلتا هولدينغ | Technology | 110,292.00 | 71.78 | 64.74 | 703.86 | 703.86 |
| | Alj; Bennani | Label Vie – Hyper<br>لابيل ڤي | Conglomerate | 61,601.10 | 89.45 | 71.57 | 859.58 | 859.58 |
| | Bennis | Trarem Afrique S.A | Office Machinery Import and Distribution | 11,811.90 | 100.00 | 61.03 | 421.07 | 421.07 |
| | Bouveur | Delattre Levivier Maroc | Construction | 10,710.10 | 79.99 | 63.99 | 635.47 | 848.66 |
| | El Alami | CNIA SAADA Assurance | Finance | 74,832.50 | 91.46 | 76.46 | 2,495.57 | 6,021.18 |
| | El Alami | Société Afric Industries SA | Industrial | 3,085.78 | 84.80 | 57.11 | 31.34 | 146.00 |
| | Rtabi | JET ALU Maroc S.A | Industrial | 27,201.60 | 53.56 | 42.32 | 105.39 | 1,435.79 |
| | Hamdi | Ennakl Automobiles SA | Transport | 22,281.70 | 99.99 | 59.99 | 189.88 | 1,230.76 |
| | Ziatt | Société de Travaux de Réalisation d'Ouvrages et de Construction Industrielle | Construction | 11,912.30 | 100.00 | 76.90 | 717.28 | 718.73 |
| **Tunisia** | Bayahi | Tunisie Profilés Aluminium<br>تونس لمجنبات الأليمنيوم | Metals Manufacture | 16,284.30 | 100.00 | 83.89 | 1,033.28 | 2,961.81 |
| | El Materi | Société Adwya<br>أدوية | Pharmaceutical Distribution | 6,179.98 | 98.40 | 68.40 | 2,680.76 | 13,612.76 |
| | Mzabi | Automobile Reseau Tunisien et Services<br>الشبكة التونسية للسيارات و الخدمات | Car Distribution | 64,215.40 | 99.95 | 69.78 | 379.96 | 16,397.06 |
| | Ben Ayed | Poulina Group Holding<br>بولينا القابضة | Industrial | 80,118.30 | 96.02 | 86.13 | 33,657.10 | 33,657.10 |
| | Hachicha | Société Electrostar<br>إلكتروستار | Technology | 6,058.16 | 100.00 | 70.00 | 657.73 | 657.73 |
| | Kallel | L'Accumulateur Assad<br>البطارية التونسية أسد | Battery Production and Distribution | 20,045.20 | 77.90 | 56.50 | 259.24 | 644.85 |
| | Djerbi | Société Generale Industrielle de Filtration<br>الصناعية العامة للمصافي | Car Distribution | 4,038.37 | 79.99 | 68.25 | 386.50 | 698.03 |
| | Ben Amor | Karthago Airlines | Transport | 4,652.67 | 79.50 | 63.60 | 202.00 | 1,357.03 |
| | Lahmar | Société de production Agricole Teboulba<br>الانتاج الفلاحي بطبلبة | Food Processing | 4,644.72 | 100.00 | 73.86 | 121.20 | 121.20 |

| | Family | IPO Firm | Industry | Gross Proceed (US$ '000) | Family Own Pre-IPO (%) | Family Own Post-IPO (%) | Board Base Salary (US$ '000) | Board Total Rem. (US$ '000) |
|---|---|---|---|---|---|---|---|---|
| | Abdennadher | Société Moderne de Céramiques العصرية للخزف | Household goods | 15,149.10 | 76.08 | 66.57 | 260.58 | 1,080.25 |
| | Arem | Société Tunisienne d'Equipement التونسية للتجهيز | Vehicle spare parts | 1,442.77 | 100.00 | 73.50 | -- -- | -- -- |
| | Loukil | Les Ateliers Mechaniques du Sahel (AMS) | Vehicle spare parts | 6,345.98 | 64.40 | 45.80 | 141.57 | 7,524.49 |
| | Hidoussi | Hexabyte إكزيبايت | Technology | 1,269.20 | 71.28 | 59.87 | 15,871.40 | 15,871.40 |

| | Disclosure (%) | Gross Proceed (US$ '000) | Family Own Pre-IPO (%) | Family Own Post-IPO (%) | Board Base Salary (US$ '000) | Board Total Rem. (US$ '000) |
|---|---|---|---|---|---|---|
| Mean: Family Firms | 20.45% | 76,615.60 | 84.16 | 62.50 | 32,402.80 | 126,689.41 |
| Mean: Non-Family Firms* | 26.47% | 295,979.52 | 0.98 | 0.81 | 1,167.02 | 1,869.26 |

Source: Compiled by authors from IPO listings prospectuses lodged with stock exchanges and national regulators prior to listing
Notes: * indicates mean non-family firm as reference only. Individual non-family firm data is not reported here for brevity.